

Cydney & Mya

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AI Ethics Field Guide Exhibit - Case & Mechanism Explanation - Final Version

Data Centers are buildings that store thousands of computers and technological software. Data centers gather, process, and store vast amounts of digital information, ranging from personal, financial, and medical records to enterprise applications, multimedia content, and AI, machine learning, and IoT data. Data centers happen to be the biggest issue when it comes to the environmental impact of AI because data centers can exist anywhere where massive amounts of electric power grids exist. Unfortunately, this happens to be in communities with vast populations, such as Philadelphia. These electric grids run off fossil fuels, which are the leading cause of pollution that impacts air quality and the health of citizens. Climate change is also one of the largest problems the world faces, so data centers funded by giant companies such as Google, Amazon, etc puts the well-being of the global population on the back burner.

These giant companies have been working on adding more alternative ways to power data centers since they need energy to process data; however, this is very costly and doesn't immediately combat environmental issues. Citizens in the Philadelphia area have seen an increase in electric bills to power these endeavors into technological advancement, as well as the data centers themselves. Apparently, ChatGPT takes 10 times the energy to produce answers compared to a regular Google search. Data centers take the power to run that typically would require the electricity use of thousands of houses and hundreds of thousands of electric cars.

In addition to electricity, data centers use massive amounts of water to cool and humidify servers in the facility. This affects not only Pennsylvania but also other states such as Delaware. This increases the cost and accessibility to water that communities have. This means water isn't being used to keep humans alive and aid them, but to keep technology alive. These data centers are also black boxes, so we don't technically know how many data centers there are in Pennsylvania, all the energy they use, the cost of this energy, and citizens have no control over where these data centers are built/operated.

Big companies investing in these AI data centers get huge tax breaks, and data centers don't actually create many permanent jobs for those who live in the community. So data centers cost but give nothing in return.

After researching data centers, I was wondering why we need data centers. We need them so we can do things like stream, watch TV, email others, use online banking, and basically just enjoy technology as we know it reliably. This just made me think of how we regular people enjoy technology without putting any input into how it works, costs, or impacts us once we subscribe to it. That being

said, interrupting where data centers are placed is kinda coming in at the last part of a giant process. Possibly, we as citizens should be more involved in what we subscribe to and support before just diving into these new AIs, softwares and technological advancements.

References

- Dodson, D. (2026, February 11). Data centers explained: What they are, why the Philly area is seeing more of them and how they affect us. Retrieved February 16, 2026, from WHYY website: <https://whyy.org/articles/data-centers-explainer/>
- NBC 10 Philadelphia. (2026, November 10). Retrieved February 16, 2026, from YouTube website: <https://youtu.be/qw9hOXQUDYY?si=knZhbzZvoM6FrDk>
- Why are data centres so important? (2023, November 8). Retrieved from Faistgroup.com website: <https://www.faistgroup.com/news/data-centres/>
- Yencha, A. (2025, October 20). Data Centers and Water Use in Pennsylvania. Retrieved February 15, 2026, from Psu.edu website: <https://extension.psu.edu/data-centers-and-water-use-in-pennsylvania>